

What is claimed is:

1. A light-emitting device, comprising:
a semiconductor diode die that emits light through at least one face thereof; and
an encapsulant that at least partially encapsulates the semiconductor diode die,
the encapsulant including at least a portion adjacent the face that comprises an
amorphous fluoropolymer.
2. The light-emitting device of claim 1, wherein:
the portion of the encapsulant adjacent the face is shaped to form at least a
portion of a lens for directing the light emitted through the face.
3. The light-emitting device of claim 1, wherein:
the portion of the encapsulant adjacent the face comprises a lens for directing
the light emitted through the face.
4. The light-emitting device of claim 1, wherein:
the semiconductor diode die comprises a flip chip grown on a substrate that
forms the face.
5. The light-emitting device of claim 4, wherein:
the substrate comprises sapphire.
6. The light-emitting device of claim 1, wherein:
the encapsulant is injection molded.
7. The light-emitting device of claim 1, further comprising:
a lens comprising an amorphous fluoropolymer, joined to the encapsulant, for
directing the light emitted through the face.

8. The light-emitting device of claim 1, wherein:
the semiconductor diode die comprises a light-emitting diode die.
9. The light-emitting device of claim 1, wherein:
the semiconductor diode die comprises a laser diode die.
10. The light-emitting device of claim 1, wherein:
the emitted light comprises ultraviolet light.
11. The light-emitting device of claim 1, wherein:
the emitted light comprises infrared light.
12. The light-emitting device of claim 1, wherein:
the portion adjacent the face substantially consists of amorphous fluoropolymer.
13. The light-emitting device of claim 1, wherein:
the encapsulant substantially consists of amorphous fluoropolymer.
14. A light-emitting device, comprising:
a semiconductor diode die that emits light through at least one face thereof; and
an integral encapsulant and lens comprising an amorphous fluoropolymer that
encapsulates at least the face and directs the light emitted through the face.
15. A light-emitting device, comprising:
a semiconductor diode die that emits light through at least one face thereof;
an encapsulant comprising an amorphous fluoropolymer that encapsulates at
least the face; and
at least one lens comprising an amorphous fluoropolymer joined to the

encapsulant for directing the light emitted through the face.

16. A method for encapsulating a light-emitting device, comprising:
providing a semiconductor diode device that emits light through at least one face thereof; and
at least partially encapsulating the semiconductor diode device using an encapsulant including at least a portion adjacent the face that comprises an amorphous fluoropolymer.
17. The method of claim 16, wherein:
the encapsulating comprises injection molding the amorphous fluoropolymer.
18. The method of claim 16, wherein:
the semiconductor diode device comprises one of a die and a microarray.
19. A method for coating a light-emitting device, comprising:
providing at least one semiconductor diode device that emits light through at least one face thereof; and
at least partially coating the at least one semiconductor diode device including at least a portion adjacent the face using a coating that comprises an amorphous fluoropolymer.
20. The method of claim 19, wherein:
the at least one semiconductor diode device comprises one of a die and a microarray.